

Appl. No. 10/786,373
Reply to Office Action of July 21, 2006

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REMARKS

In the July 21, 2006 Office Action, claims 1-13 and 24-46 were rejected. Claims 15-23 were earlier withdrawn in response to a restriction requirement. This Response amends claims 1, 13 24, 26 and 34. After entry of the foregoing amendments, claims 1-13 and 24-46 (36 total claims; 3 independent claims) remain pending in the application.

I. No Anticipation by Holister

In the Office Action, the Examiner rejected claims 34-38 under 35 U.S.C. Sec. 102(b) as being anticipated by U.S. Patent No. 2,418,770, issued April 8, 1947 to Holister et al. (hereinafter, "Holister"). Applicants respectfully traverse these rejections.

Claim 34 of the instant application is directed to an apparatus for abrading a work piece. The apparatus comprises a base and two support members physically coupled to the base. The two support members lie in a plane. A carriage member is slidably mounted to the two support members and is coupled to the base only by the two support members. At least one vertical drive mechanism is configured to reciprocate the carriage assembly in a vertical direction along the two support members. A spindle is rotationally mounted to the carriage member, is disposed outside of the plane, and is configured to rotate about a central axis. An upper abrading wheel assembly is coupled to the spindle. The upper abrading wheel assembly comprises an upper abrading wheel having a first working surface. A lower abrading wheel has a second working surface. The second working surface of the lower abrading wheel is disposed parallel to and in direct vertical opposition to the first working surface of the upper abrading wheel.

In contrast, as illustrated in FIG. 4 of Holister, the working surface of the top grinding wheel 30 of Holister is not disposed in direct vertical opposition to the working surface of the bottom grinding wheel 34. In fact, Holister teaches away from the working surface of the top grinding wheel 30 in direct vertical opposition to the second working surface. As stated in Holister, "An important object of the invention is to provide means for grinding both ends of coil springs, *but not simultaneously*." [Col. 1, lines 4-6] In addition, Holister provides that "[a] further object of the invention is to provide means to resiliently maintain the springs in engagement with the grinding devices." [Col. 1, lines 11-13]. Thus, to achieve the objects of Holister, springs 70 to be grinded are held resiliently by a plate 90 against bottom grinding

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wheel 34 and are held resiliently by plate 68 against the top grinding wheel 30. [Col. 4, lines 30-57].

In sum, Holister does not disclose an apparatus for abrading a work piece wherein a first working surface is disposed in direct vertical opposition to a second working surface. In fact, Holister teaches that the first working surface should not overlie, even partially, the second working surface. Accordingly, Holister does not anticipate Claim 34, nor claims 35-38 that depend therefrom, and Applicants request that the Sec. 102(b) rejection be withdrawn.

II. Claims Are Not Obvious Over Holister In View of Kahn

In the Office Action of July 21, 2006, the Examiner rejected claims 1, 2, 6-10, 24-27, 29, 42, 43, 45, and 46 under 35 U.S.C. Sec. 103(a) on the ground that these claims are unpatentable over Holister in view of U.S. Patent Application 6,196,907, issued March 6, 2001 to Kahn (hereinafter "Kahn"). Applicants respectfully traverse these rejections.

Claim 1 of the instant application is directed to an apparatus for abrading a work piece. The apparatus comprises a base and two support members physically coupled to the base. The two support members lie in a plane. A carriage member is slidably mounted to the two support members and is coupled to the base only by the two support members. At least one vertical drive mechanism is configured to reciprocate the carriage member in a vertical direction along the two support members. A spindle is rotationally mounted to the carriage member and is configured to rotate about a central axis. The spindle has a channel disposed longitudinally therethrough is disposed outside the plane. An upper abrading wheel has a first working surface and comprises a plurality of first conduits. Each of the first conduits has a first orifice and a second orifice. The first orifice of each of the plurality of first conduits is disposed at the first working surface and the second orifice of each of the plurality of first conduits is in fluid communication with the longitudinal channel of the spindle. A lower abrading wheel has a second working surface, which is disposed parallel to and in direct vertical opposition to the first working surface of the upper abrading wheel.

Similarly, claim 24 of the instant application is directed to an apparatus for abrading a work piece. The apparatus comprises a base and two support members fixedly attached to the base and extending vertically from the base. The two support members lie in a plane. A carriage member is slidably mounted to the two support members and at least partially

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extends in a direction substantially perpendicular to the plane. The carriage member is coupled to the base only by the two support members. The apparatus also comprises at least one vertical drive means for reciprocating the carriage member vertically along at least one of the two support members. A spindle is supported by the carriage member and is disposed outside the plane. The spindle, which is configured to rotate about a central axis, has a longitudinal channel that is configured to receive a fluid. A rotary drive means rotates the spindle about the central axis. A lower abrading wheel assembly is disposed partially within the base and comprises a lower abrading wheel with a first working surface. An upper abrading wheel assembly comprises an upper abrading wheel having a second working surface. The second working surface of the upper abrading wheel is disposed parallel to and overlies the first working surface of the lower abrading wheel. The upper abrading wheel assembly comprises a fluid distribution system in fluid communication with the longitudinal channel of the spindle and is configured to distribute a fluid to the second working surface.

Claim 34 of the instant application also is directed to an apparatus for abrading a work piece. The apparatus comprises a base and two support members physically coupled to the base. The two support members lie in a plane. A carriage member is slidably mounted to the two support members and is coupled to the base only by the two support members. At least one vertical drive mechanism is configured to reciprocate the carriage assembly in a vertical direction along the two support members. A spindle is rotationally mounted to the carriage member, is disposed outside of the plane, and is configured to rotate about a central axis. An upper abrading wheel assembly is coupled to the spindle. The upper abrading wheel assembly comprises an upper abrading wheel having a first working surface. A lower abrading wheel has a second working surface. The second working surface of the lower abrading wheel is disposed parallel to and in direct vertical opposition to the first working surface of the upper abrading wheel.

In contrast, as described above, and as illustrated in FIG. 4 of Holister, the working surface of the top grinding wheel 30 of Holister is not disposed in direct vertical opposition to the working surface of the bottom grinding wheel 34. In fact, Holister teaches away from the working surface of the top grinding wheel 30 overlying, even partially, the second working surface. As stated in Holister, "An important object of the invention is to provide means for grinding both ends of coil springs, *but not simultaneously*." [Col. 1, lines 4-6] In addition,

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Holister provides that “[a] further object of the invention is to provide means to resiliently maintain the springs in engagement with the grinding devices.” [Col. 1, lines 11-13]. Thus, to achieve the objects of Holister, springs 70 to be grinded are held resiliently by a plate 90 against bottom grinding wheel 34 and are held resiliently by plate 68 against the top grinding wheel 30. [Col. 4, lines 30-57].

It would not be obvious to combine Holister and Kahn. Holister teaches that the top working surface and the bottom working surface are not directly vertically opposed and that the top working surface does not overlie the bottom working surface. Kahn shows in FIG. 1 that the top working surface 2 is directly vertically opposed to and overlies the bottom working surface 4. Thus, the combination of Holister and Kahn would change the principle operation of Holister. Accordingly, because there is no suggestion or motivation to combine Holister and Kahn to obtain the invention of independent claims 1, 24, and 34, and hence claims 2, 6-10, 25-27, 29, 42, 43, 45, and 46 that depend therefrom, these claims are not obvious over Holister in view of Kahn.

III. Claims Are Not Obvious Over Holister In View of Cesna

In the Office Action of July 21, 2006, the Examiner rejected claims 39-41 under 35 U.S.C. Sec. 103(a) on the ground that these claims are unpatentable over Holister in view of U.S. Patent Application 5,595,529, issued January 21, 1997 to Cesna et al. (hereinafter “Cesna”). Applicants respectfully traverse these rejections.

Claims 39-41 depend from Claim 34. As described above, claim 34 of the instant application is directed to an apparatus for abrading a work piece wherein the second working surface of the lower abrading wheel is disposed parallel to and in direct vertical opposition to the first working surface of the upper abrading wheel.

In contrast, as described above, and as illustrated in FIG. 4 of Holister, the working surface of the top grinding wheel 30 of Holister is not disposed in direct vertical opposition to the working surface of the bottom grinding wheel 34. In fact, Holister teaches away from the working surface of the top grinding wheel 30 overlying the second working surface.

Thus, it would not be obvious to combine Holister and Cesna. Holister teaches that the top working surface does not overlie, even partially, the bottom working surface. Cesna shows in FIG. 1 that the top working surface 12 is directly vertically opposed to and overlies

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the bottom working surface 14. Thus, the combination of Holister and Cesna would change the principle operation of Holister. Accordingly, because there is no suggestion or motivation to combine Holister and Cesna to obtain the invention of claims 39-41, these claims are not obvious over Holister in view of Cesna.

IV. Claims Are Not Obvious Over Holister In View of Kahn and Cesna

In the Office Action of July 21, 2006, the Examiner rejected claims 3-5, 11-13, 28, 30-33, and 44 under 35 U.S.C. Sec. 103(a) on the ground that these claims are unpatentable over Holister in view of Kahn and further in view of Cesna. Applicants respectfully traverse these rejections.

Claims 3-5, and 11-13 depend from independent claim 1. Claims 28 and 30-33 depend from independent claim 24, and claim 44 depends from independent claim 34. As described above, claim 1 is directed to an apparatus for abrading a work piece wherein a lower abrading wheel has a second working surface, which is disposed parallel to and in direct vertical opposition to a first working surface of an upper abrading wheel. Claim 24 is directed to an apparatus for abrading a work piece wherein a second working surface of an upper abrading wheel is disposed parallel to and overlying a first working surface of a lower abrading wheel. Claim 34 of the instant application is directed to an apparatus for abrading a work piece wherein the second working surface of the lower abrading wheel is disposed parallel to and in direct vertical opposition to the first working surface of the upper abrading wheel.

In contrast, as described above, and as illustrated in FIG. 4 of Holister, the working surface of the top grinding wheel 30 of Holister is not disposed in direct vertical opposition to the working surface of the bottom grinding wheel 34. In fact, Holister teaches away from having the working surface of the top grinding wheel 30 overlying the working surface of the bottom grinding wheel.

Thus, it would not be obvious to combine Holister with Cesna and Kahn. Holister teaches that the top working surface does not overlie, even partially, the bottom working surface. Cesna shows in FIG. 1 that the top working surface 12 is directly vertically opposed to and overlies the bottom working surface 14. Kahn shows in FIG. 1 that the top working surface 2 is directly vertically opposed to and overlies the bottom working surface 4. Thus,

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the combination of Holister with Kahn and Cesna would change the principle operation of Holister. Accordingly, because there is no suggestion or motivation to combine Holister with Cesna and Kahn to obtain the invention of claims 3-5, 11-13, 28, 30-33, and 44, these claims are not obvious over Holister in view of Cesna.

CONCLUSION

In view of Applicants' amendments and remarks, it is respectfully submitted that the Examiner's rejections under 35 U.S.C. Secs. 102(b) and 103(a) have been overcome. Accordingly, Applicants respectfully submit that the application, as amended, is now in condition for allowance, and such allowance is therefore earnestly requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned attorney at (480) 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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Dated: August 22, 2006

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